

Using optical beaming to power a portable 5G base station

October 7 2021, by Bob Yirka



Credit: Ericsson

Telecommunications company Ericsson has teamed up with a company called PowerLight Technologies to send power through the air to run a 5G base station. Both companies have posted the details on their respective websites.

Consumers have already seen through-the-air power exchange in the

form of wireless charging stations—such stations have used a form of technology to transfer electricity [short distances](#), a type of energy transfer that is not expected to work over long distances. In this new effort, the two companies took a different approach—they developed a system called optical beaming in which a sending station converts electricity to a powerful beam of light that is sent through the air to a receiving station.

The light is captured at the receiving station using a special type of photovoltaic array and is then converted to electricity. The two companies have proven their concept viable by sending power from a sending station to an Ericsson 5G radio [base station](#), which, they note, did not have any other source of power. The test system sent 48 watts over 300 meters. In its [announcement](#), Ericsson claims that the system is capable of sending up to 1,000 watts up to distances of a kilometer. Noting that the power in the [beam of light](#) could present a hazard to both humans and wildlife, the team built a ring of protection around it—sensors formed in a ring around the beam that detect the presence of anything coming between the sending and receiving stations. In such circumstances, the beam is cut off and the base station operates temporarily on [battery power](#).

In their announcement, PowerLight [suggests](#) that because the receiving stations can be portable, the system could be used in a wide variety of applications, including providing power at concerts and powering submersible drones. Ericsson suggests they could one day be used to provide power to orbiting spacecraft. Others have envisioned such systems as useful for powering charging stations for [electric cars](#), or for making the power grid more adjustable. There is also the possibility of a similar system being used to restore [power](#) during natural disasters or in war zones.

More information: www.ericsson.com/en/news/2021/...harging-

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Citation: Using optical beaming to power a portable 5G base station (2021, October 7) retrieved 24 April 2024 from <https://techxplore.com/news/2021-10-optical-power-portable-5g-base.html>

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